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Title: METHOD AND APPARATUS FOR USING ATRIAL DISCRIMINATION ALGORITHMS TO DETERMINE OPTIMAL PACING THERAPY

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REMARKS

This responds to the Final Office Action dated May 4, 2004 and the Advisory Action dated October 19, 2004. Claims 1, 11, 14, 21, 30, 41, 44, 52, and 62 have been amended. Claims 9, 10, 20, 39, 40, and 51 are canceled herein. Claims 1, 3-8, 11-19, 21-31, 33-38, 41-50, 52-59, and 62-77 are now pending. Of these pending claims, claims 22-29, 53-59, and 63-77 currently stand withdrawn.

Restriction / Election

Claims 66-77 were withdrawn from consideration as being directed to a non-elected invention.

Applicant respectfully traverses the withdrawal of independent claims 66 and 71. The Final Office Action of May 4, 2004 states, as the reason for withdrawing claims 66-77:

Newly submitted independent claims 66 and 71 comprises the element of providing an indication /a means for providing and indication of the type of tachycardia identified, and this limitation is not found in the originally submitted independent claims 1, 14, 30, 44, and 62.

The Advisory Action of October 19, 2004 maintains the withdrawal by repeating essentially the same reason without addressing Applicant's arguments in support of the traversal of the withdrawal of claims 66 and 71 made in the Response to the Final Office Action, submitted on September 3, 2004. Thus, Applicant incorporates herein the arguments made in the Response to the Final Office Action submitted on September 3, 2004 and requests a clarification on why the asserted reason as quoted above supports the conclusion that claims 66 and 71 are not generic or linking claims, particularly in view of the claims that depend on claim 66 (e.g., providing an indication includes controlling pacing as recited in claim 67).

Applicant respectfully requests consideration of claims 66 and 71.

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Reconsideration of Withdrawn Claims

In accordance with 37 CFR 1.141, Applicant respectfully requests consideration of the claims that were withdrawn as being directed to a non-elected species upon the allowance of claim 66, claim 71, or any other claim that is determined to be generic. Applicant respectfully asserts that claims 66 and 77 are in condition for allowance. Pursuant to MPEP §809.02(e), should the Examiner allow a generic claim but find that a claim directed to a species is not in the required form, Applicant reminds the Examiner of its rights to be notified of allowance of a generic claim and be given a time frame to conform all of the claims to the nonelected species to fully embrace an allowed generic claims.

When the application is otherwise ready for issue and there is an allowed generic claim, and applicant has not be previously notified as to the allowance of a generic claim, applicant must be advised of the allowance of the generic claim and given a time limit of 1 month (not less than 30 days) to conform all of the claims to the nonelected species to fully embrace an allowed generic claim or the examiner will cancel the claims to each nonconforming species by examiner's amendment and pass the application to issue. MPEP 809.02(c)

§102 Rejection of the Claims

Claims 1, 3, 5-14, 16-21, 30, 31, 33, 35-45, 47-52 and 62 were rejected under 35 USC § 102(b) as being anticipated by Gillberg et al. (U.S. Patent No 5,755,736, hereinafter "Gillberg").

Claim 1

Claim 1 was amended to better describe the recited subject matter. Support for the amendment is found in, for example, Page 6, lines 22-25 of the Application. Insofar as the rejection is applied to claim 1, Applicant respectfully traverses the rejection and submits that Gillberg does not provide the recited subject matter. For example, Applicant is unable to find, among other things, that Gillberg teaches or suggests controlling pacing of the heart to provide atrial antitachycardia pacing in response to an identified first one of at least two different types of supraventricular tachycardia and to provide ventricular pacing in response to an identified second one of the at least two different types of supraventricular tachycardia, as recited in claim 1.

The Final Office Action of May 4, 2004, paragraph 3, cites portions of Gillberg ("col. 18 @ 51-54; col. 19 @ 57-59; col. 20 @ 7-10") to support the assertion that "ventricular pacing is

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taught when atrial arrhythmia are detected." Applicant respectfully traverses this assertion and its use in support of the rejection of the claims of the present Application. These cited portions of Gillberg state:

The VP+SVT Rule is the highest priority rule employed by the device, and detects the simultaneous presence of VF and SVT. If it is met, it triggers delivery of the next scheduled ventricular fibrillation therapy, typically a high voltage defibrillation pulse.

The second highest priority rule is intended to identify the simultaneous occurrence of ventricular tachycardia and supraventricular tachycardia. * * * If all of these clauses are satisfied, the rule is set true and "fires" triggering delivery of the next scheduled ventricular tachycardia therapy.

Thus, the cited portions of Gillberg relate to delivery of a "ventricular fibrillation therapy" when "the simultaneous presence of VF and SVT" is detected and delivery of a "ventricular tachycardia therapy" when "the simultaneous occurrence of ventricular tachycardia and supraventricular tachycardia" is identified. Applicant respectfully submits that this does not teach or suggest controlling pacing of the heart to provide ventricular pacing in response to an identified second one of the at least two different types of supraventricular tachycardia, as recited in claim 1. Moreover, Applicant is unable to find in Gillberg any teaching that the "ventricular tachycardia therapy" or "ventricular tachycardia therapy" as used in the above cited portions includes ventricular pacing.

The Advisory Action dated October 19, 2004 states:

Gillberg et al. make a distinction between two type of regular rapid rate supraventricula [sic] tachycardia having regular rapid supraventricular rates, the two tachycardia rates being a fast ventricular tachycardia and a slow ventricular tachycardia (col 14 @ 42-44), the comparison of the two tachycardia rates accomplished as shown in the flow chart of figure 11 (col. 18 @26-49) where tachycardia and fibrillation as used to show how difference heart rates are compared. (emphasis added)

Applicant respectfully traverses this assertion. It is unclear how the alleged teaching of two types of *ventricular* tachycardia relates to a distinction of the two different types of *supraventricular* tachycardia. Applicant respectfully requests a clarification of this assertion in the next official communication, or its withdrawal is believed to be appropriate.

Applicant respectfully request reconsideration and allowance of claim 1.

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Claims 2, 3, 5-8 and 11-13

Applicant respectfully traverses the rejection of claims 2, 3, 5-8 and 11-13. Claims 2, 3, 5-8 and 11-13 are dependent on claim 1. Thus, the discussion for claim 1 above is incorporated herein to support the patentability of claims 2, 3, 5-8 and 11-13.

Applicant respectfully request reconsideration and allowance of claims 2, 3, 5-8 and 11-13.

Claim 14

Claim 14 was amended to better describe the recited subject matter. Support for the amendment is found in, for example, Page 6, lines 22-25 of the Application. Insofar as the rejection is applied to claim 14, Applicant respectfully traverses the rejection and submits that Gillberg does not provide the recited subject matter. For example, Applicant is unable to find, among other things, that Gillberg teaches or suggests controlling pacing of the heart to provide atrial antitachycardia pacing if a slower rate supraventricular tachycardia is identified as occurring and to provide ventricular pacing if a fast atrial flutter is identified as occurring, as recited in claim 14.

Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 14. Specifically as applied to claim 14, Applicant respectfully submits that the cited portions of Gillberg does not teach or suggest controlling pacing of the heart to provide ventricular pacing if a fast atrial flutter is identified as occurring, as recited in claim 14. Additionally, Applicant respectfully requests a clarification on how the alleged teaching of two types of *ventricular* tachycardia relates to a distinction between the slower rate *supraventricular* tachycardia and the fast *atrial* flutter, or the withdrawal of the assertion as applied to claim 14.

Applicant respectfully requests reconsideration and allowance of claim 14.

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Claims 16-19 and 21

Applicant respectfully traverses the rejection of claims 16-19 and 21. Claims 16-19 and 21 are dependent on claim 14. Thus, the discussion for claim 14 above is incorporated herein to support the patentability of claims 16-19 and 21.

Applicant respectfully request reconsideration and allowance of claims 16-19 and 21.

Claim 30

Claim 30 was amended to better describe the recited subject matter. Support for the amendment is found in, for example, Page 6, lines 22-25 of the Application. Insofar as the rejection is applied to claim 30, Applicant respectfully traverses the rejection and submits that Gillberg does not provide the recited subject matter. For example, Applicant is unable to find, among other things, that Gillberg teaches or suggests a processor for controlling a pacer to provide an atrial antitachycardia pacing therapy to the heart for a first type of regular supraventricular tachycardia and a ventricular pacing therapy to the heart for a second type of regular supraventricular tachycardia, as recited in claim 30.

Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 30. Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 30. Specifically as applied to claim 30, Applicant respectfully submits that the cited portions of Gillberg does not teach or suggest controlling a pacer to provide a ventricular pacing therapy to the heart for a second type of regular supraventricular tachycardia, as recited in claim 30. Additionally, Applicant respectfully requests a clarification on how the alleged teaching of two types of ventricular tachycardia relates to a distinction of the first and second types of regular supraventricular tachycardia, or the withdrawal of the assertion as applied to claim 30.

Applicant respectfully requests reconsideration and allowance of claim 30.

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Claims 31, 33, 35-38, and 41-43

Applicant respectfully traverses the rejection of claims 31, 33, 35-38, and 41-43. Claims 31, 33, 35-38, and 41-43 are dependent on claim 30. Thus, the discussion for claim 30 above is incorporated herein to support the patentability of claims 31, 33, 35-38, and 41-43.

Applicant respectfully request reconsideration and allowance of claims 31, 33, 35-38, and 41-43.

Claim 44

Claim 44 was amended to better describe the recited subject matter. Support for the amendment is found in, for example, Page 6, lines 22-25 of the Application. Insofar as the rejection is applied to claim 44, Applicant respectfully traverses the rejection and submits that Gillberg does not provide the recited subject matter. For example, Applicant is unable to find, among other things, that Gillberg teaches or suggests a processor for controlling a pacer to provide atrial antitachycardia pacing to the heart if a slower rate supraventricular tachycardia is identified as occurring and to provide ventricular pacing if a fast atrial flutter is identified as occurring, as recited in claim 44.

Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 44. Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 44. Specifically as applied to claim 44, Applicant respectfully submits that the cited portions of Gillberg does not teach or suggest controlling a pacer to provide ventricular pacing if a fast atrial flutter is identified as occurring, as recited in claim 44. Additionally, Applicant respectfully requests a clarification on how the alleged teaching of two types of *ventricular* tachycardia relates to a distinction between the slower rate *supraventricular* tachycardia and the fast atrial flutter, or the withdrawal of the assertion as applied to claim 44.

Applicant respectfully requests reconsideration and allowance of claim 44.

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Claims 45, 47-50, and 52

Applicant respectfully traverses the rejection of claims 45, 47-50, and 52. Claims 45, 47-50, and 52 are dependent on claim 44. Thus, the discussion for claim 44 above is incorporated herein to support the patentability of claims 45, 47-50, and 52.

Applicant respectfully request reconsideration and allowance of claims 45, 47-50, and 52.

Claim 62

Claim 62 was amended to better describe the recited subject matter. Support for the amendment is found in, for example, Page 6, lines 22-25 of the Application. Insofar as the rejection is applied to claim 62, Applicant respectfully traverses the rejection and submits that Gillberg does not provide the recited subject matter. For example, Applicant is unable to find, among other things, that Gillberg teaches or suggests a processor for controlling the pacer to provide atrial antitachycardia pacing to the heart for an identified slower rate supraventricular tachycardia and to provide ventricular pacing for an identified fast atrial flutter, as recited in claim 62.

Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 62. Applicant also incorporates herein the discussion above for claim 1 to support the patentability of claim 62. Specifically as applied to claim 62, Applicant respectfully submits that the cited portions of Gillberg does not teach or suggest controlling a pacer to provide ventricular pacing for an identified fast atrial flutter, as recited in claim 62. Additionally, Applicant respectfully requests a clarification on how the alleged teaching of two types of ventricular tachycardia relates to a distinction between the slower rate supraventricular tachycardia and the fast atrial flutter, or the withdrawal of the assertion as applied to claim 62.

Applicant respectfully requests reconsideration and allowance of claim 62.

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Claims 9, 10, 20, 39, 40, and 51

Claims 9, 10, 20, 39, 40, and 51 are canceled, rendering the rejection of these claims moot.

§103 Rejection of the Claims

Claims 4, 15, 34 and 46 were rejected under 35 USC § 103(a) as being unpatentable over Gillberg et al. (U.S. Patent No 5,755,736) in view of Ayers et al. (U.S. Patent No. 5,549,641).

Applicant respectfully traverses the rejection of claims 4, 15, 34 and 46. Claim 4 is dependent on claim 1, and the discussion for claim 1 above is incorporated herein to support the patentability of claim 4. Claim 15 is dependent on claim 14, and the discussion for claim 14 above is incorporated herein to support the patentability of claim 15. Claim 34 is dependent on claim 30, and the discussion for claim 30 above is incorporated herein to support the patentability of claim 34. Claim 46 is dependent on claim 44, and the discussion for claim 44 above is incorporated herein to support the patentability of claim 46.

Applicant respectfully request reconsideration and allowance of claims 1, 15, 35, and 46.

AMENDMENT & RESPONSE UNDER 37 C.F.R. 1.116

Serial Number: 09/712,600

Filing Date: November 14, 2000

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6960 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

VICTOR T. CHEN ET AL.

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